



ARTICLE

Cartoon Image of the Mother, Its Perception by Elementary School Students and Correction in the Process of Media Education

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ABSTRACT

This article presents a psychological study of the mother image projected in cartoons and its perception by elementary school students. The research provides evidence for the importance of an integral approach to the analysis of media texts addressed to children, as well as for the necessity of considering their narrative, verbal, and descriptive components. A psychological analysis was conducted on the material of three cartoons: “Chunya” (USSR), “Barboskiny” [The Barkers] (Russia), and “Peppa Pig” (UK). Hypotheses were formulated about the potential influence of the cartoons on the younger audience. 70 elementary school students (\bar{x} = 9.5 years old) took part in the study. The research was conducted using the method of semantic differential; the data obtained were processed using factor analysis. The results show that the categorization of images follows the factors of “education”, “love”, “patience”, and “respect”. Differences in the semantic assessment of the cartoons under study are presented. Children perceive the events taking place in a cartoon directly, without reflection. Artistic mediation—polysemy, metaphors, and the category of the comic—does not evoke an aesthetic reaction in children, as assumed by the authors. It was found that the semantic assessment of the word “mother” by elementary school students did not agree

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with the traditional cultural status of a mother. Thus, the respondents ranked such indicators as “understanding” and “prestige” at a low level. A developmental experiment was conducted to correct the mother image as perceived by elementary school students. During the experimental program (8 lessons in total), the schoolchildren watched and discussed the cartoons together with a psychologist. At the end of the experiment, the semantic assessment of the verbal stimulus “mom” by the respondents showed a statistically significantly increase ($p \leq 0.05$) in the indicators of “understanding” and “prestige”.

KEYWORDS

cartoon, mother image, elementary school students, psychological analysis, narrative, semantic assessment, harmonic center

Introduction

Media communications today penetrate all areas of human life. Children are involuntary but active consumers of media content. Since the modern living space is filled with various media forms, children are forced to listen and watch commercials, news programs, talk shows, and other information addressed to adults. In addition, children make up the target audience of children’s content—first of all, cartoons, which they start watching from a very young age.

The increasing involvement of a modern child in media consumption makes the research into the psychological effects of media products on children highly important. Effective algorithms for the psychological analysis of media content should be developed to investigate the role of media content in the formation of a child’s personality and their attitude toward significant others. Thus, the image of the mother (as the most significant other) projected through cartoons should become the subject of psychological analysis. Today, the attitude toward the mother, which will further determine all aspects of a person’s mental life, is formed not only via direct mother-child communication, but is also mediated by media narratives. This fact determined the aim of our research: to conduct a psychological analysis of cartoons displaying different images of the mother in order to theoretically substantiate and empirically test their influence on the perception of the mother by younger schoolchildren.

Research into the impact of television media products on consumers is becoming increasingly active. The results show that the possibilities of influencing children through cartoons are endless—they can provoke aggression, affect the intellectual and emotional spheres of their psyche (Luo & Kim, 2020). Researchers note both negative and positive psychological consequences of media communications.

When verifying the hypothesis that marginalization of certain groups of the population in children’s minds occurs due to the stereotypes broadcast in the media (Rovner-Lev & Elias, 2020), the authors revealed that the images of older people, especially women, are extremely negative: they are weird, mean, and socially devalued. It was concluded that such images prevent the formation of a respectful

attitude toward the elderly. Zurcher and Robinson also confirmed a growing number of negative stereotypes about older people (Zurcher & Robinson, 2018).

Children are the most vulnerable group of media content consumers. A film character might become a significant other for the child, thereby influencing their view of the world: “A digital image [...] fills the inner world and becomes a condition for perception, a censor of the acceptable and unacceptable”¹ (Savchuk, 2014, p. 205). This is a rationale for analyzing the negative impact of cartoons with characters implementing destructive patterns of behavior on the screen; on the other hand, that implies that “good” cartoons can be used for educational purposes (Attard & Cremona, 2021). Güneş et al. differentiated cartoons into useful, harmful, and neutral; children, who watch harmful films, can be characterized by emotional and behavioral problems, attention deficit and communication difficulties (Güneş et al., 2020).

The use cartoons for children’s development and correction of their behavior is currently attracting much research attention. Thus, Zhang et al., when studying the possibility of reducing the aggressiveness of preschoolers by watching cartoons, showed that cartoons demonstrating models of prosocial behavior reduce the manifestations of aggression in children’s behavior (Zhang et al., 2020).

Assuming that a character’s behavior displayed in a cartoon is exemplary and motivating for children, Maria Esther del Moral Pérez and Nerea López-Bouzas assumed that cartoons with disabled characters are useful in forming a good attitude toward disabled people (del Moral Pérez & López-Bouzas, 2021). The power of cartoons consists in reducing not only anxiety, but also physical pain during phlebotomy (İnangil et al., 2020). Cartoons based on fairy tales are considered as a means for developing health-preserving competence in children with disabilities (Kazachiner & Tkachenko, 2020). In the same (educational) context, researchers propose using cartoons to form children’s healthy eating habits (Hémar-Nikolas et al., 2021).

Although the impact of media communication on children’s development is attracting wide research interest, the current literature lacks both effective algorithms for the psychological analysis of media products addressed to children and publications describing the mechanisms through which media narratives affect viewers. In addition, to the best of our knowledge, there are no correctional programs developed based on analytical work with media content. Our research aims to fill this gap.

We studied the correlation between a child’s perception of the mother image depending on its presentation in different cartoons. Mother is the most important mediator in children’s development. However, psychologists, when studying the dependence of a child’s formation on the style of maternal communication, her age, attitude to pregnancy, and education, pay little attention to the appearance of a virtual, media-mediated image of the mother in a child’s world. At the same time, researchers state that traditional cultural models of motherhood have changed due to the media. Jo Littler found that the mother image in modern films conveys unproductive behavior condemned in traditional society, including an endless entertainment and a chaotic

¹ Hereinafter, all the quotes in English are translated by the authors.

living style, which is more consistent with the behavioral model of adults with no children. The researcher believes that such a mutation of the mother image results from the neoliberal crisis, reflected in the value attitudes of the content producers (Littler, 2019).

Oksana V. Kazachenko and Elena A. Kartushina noted that modern cartoons frequently display fathers implementing maternal behavior, which indicates the value transformation of the traditional maternal image (Kazachenko & Kartushina, 2018). Based on an analysis of contemporary feature films, Tatyana L. Shishova distinguished a number of nontraditional and negative images of the mother: "mother as a hysterical woman", "foolish mother", "killer-mother", "debauchery mother" (Shishova, n.d.).

Vladimir Halilov also noted a trend toward transformation of the traditionally creative image of the mother in media products, evidencing destruction of the traditional family model in Hollywood media products. Using the cartoon "The Incredibles" as an example, he shows the transformation of family relations and the reorientation toward parental self-realization attitudes outside the family (Halilov, 2019).

The deep archetypal meaning of the mother image is revealed by Carl Jung, who sees it as part of the collective unconscious. According to him, these images are the "patterns of functioning", which result in a child's behavior (Jung, 1969, p. 87). The qualities associated with the mother archetype "are maternal solicitude and sympathy; the magic authority of the female; the wisdom and spiritual exaltation [...]; all that is benign, all that cherishes and sustains, that fosters growth and fertility" (Jung, 1969, p. 90). Maternal influence, according to Jung, is determined by her archetype, projected onto a real mother. At the same time, we believe that children's fantasies about the mother, which form their attitude and behavior, can be determined by the following assumption: these fantasies "may not always be rooted in the unconscious archetype but may have been occasioned by fairytales or accidental remarks" (Jung, 1969, p. 91). Such "remarks" undoubtedly include children's viewing experience and their encounters with the mother image on the screen.

In this study, we examine the impact of the cartoon image of the mother on elementary school students. At the same time, the subject of the study includes cartoons, in which the maternal function is performed by anthropomorphic animals. This selection is determined by the emotional influence of animals' images on children, which Lev S. Vygotsky explained by the ability of such images to create isolation from the reality, necessary for an aesthetical impression (Vygotsky, 1987, p. 122). Contemporary studies show that, when watching cartoons with anthropomorphic animals and objects, children assign human characteristics to them in the reality (Li et al., 2019). The cartoon images of animals are organic to children's perception of the world; a child perceives animals as carriers of typical cultural traits.

We hypothetically assume that the media presentation of the mother image determines its perception by elementary school students, and this perception is not reflective. We also believe that cartoons that display a positive maternal image, corresponding to archetypal semantics, can be used to correct the image of the mother in the minds of elementary school students.

During the research, the following objectives were formulated: (a) to develop an algorithm for psychological analysis of cartoons in order to determine their potential impact on children; (b) to carry out a psychological analysis of cartoons featuring mother images; (c) to analyze the specifics of perception of different cartoon mother images by younger schoolchildren; (d) to determine the correspondence between schoolchildren's semantic assessment of cartoon mother images and the hypothetically assumed psychological potential of the cartoons; (e) to conduct a developmental experiment aimed at correcting the mother image in the minds of younger schoolchildren.

Materials and Methods

Using the method of psychological analysis of media text (Kyshtymova, 2018), we formed hypotheses on the potential impact of cartoons on viewers. This allowed us to reveal the semantic (meaningful) and syntactic (formal) indices of a media product, which determine specific features of the medium world, into which the viewers get immersed. A psychological analysis of speech statements of cartoon characters was processed using the software tool TextAnalyzer.

The following cartoons containing the image of the mother were used as the evaluated stimuli: "Sama nevinnost'" [Innocence itself]—episode 48 of "Barboskiny" [The Barkers]² (Salabay et al, 2012); "Mummy Pig at Work"—episode 7 of "Peppa Pig" (Astley & Baker, 2004) and "Chunya" (Prytkov, 1968). All the cartoons are very popular: the number of views on their YouTube³ channels for 2014–2021 was 6,991,683, 1,810,391 and 78,773, respectively. There are 3,970,000 subscribers to the Peppa channel in Russia.

The stimuli were evaluated using the method of semantic differential, which is composed of scales obtained using the method of free associations: "fond of children—not fond of children"; "credible—not credible"; "hardworking—lazy"; "honest—dishonest"; "successful—unsuccessful"; "full of energy—tired"; "charming—attractive"; "rich—poor"; "prestigious—not prestigious"; "friend—foe"; "friendly—hostile"; "kind—evil"; "reliable—unreliable"; "light—dark"; "level-headed—unstable"; "pleasant—unpleasant"; "tolerant—intolerant"; "understanding—not understanding"; "cheerful—sad"; "beloved—hated"; "smart—stupid"; "humble—vain"; "strict—not strict"; "just—unjust"; "modern—old-fashioned"; "educated—uneducated"; "competent—incompetent"; "experienced—inexperienced"; "responsible—irresponsible"; "sociable—unsociable"; "tactful—tactless"; "patient—impatient"; "calm—irritable"; "fashionable—unfashionable"; "cheerful—sad"; "warm—cold"; "heartful—heartless"; "contradictory—logical"; "cultured—uncultured"; "trusting—not trusting"; "changing—consistent".

Using a developmental experiment, we aimed to correct the mother image in the minds of elementary school students and form their skills to understand and critically evaluate media content. The experimental program involved, in particular, analytical work with the cartoon "Umka" (Pekar and Popov, 1969), which contains a positive image of the mother. In total, there were eight sessions of 45 minutes each (Table 1).

² Also known as "Barboskins", a direct translation of the original Russian title "Barboskiny".

³ YouTube™ is a trademark of Google Inc., registered in the U.S. and other countries.

Table 1
Lesson Content

Section 1. My family	
1.1. Introduction to the topic. My family	Conversation on the topic “My family”, students’ stories about their family; presentation of pictures about the family, discussion.
1.2. Mother is the first word [...]	Semantic evaluation of the word “mother”. Students’ stories about their mothers.
1.3. The mother’s image in cartoons.	Discussing with the students the images of the family and mother from the cartoons “The Barkers”, “Peppa Pig” and “Chunya”.
Section 2. Real mother	
2.1. “Mothers of all kinds are important”	Conversation about mother’s images in fiction
2.2. The real mother in cartoons	Watching the cartoon “Umka”, discussing the mother’s image presented in it, highlighting its main characteristics — creating a mother’s portrait.
Section 3. Media education	
3.1. I choose a cartoon.	Discussing the criteria for a “good” cartoon. The fundamentals of the psychological safety concept.
3.2. A useful cartoon!	Creating a cartoon (drawing) with a mother’s image in small groups and their presentation.
3.3. Cartoon and mother	Semantic evaluation of the word “mother”. Coming up with a general plot for a good cartoon.

The information obtained was processed using the methods of descriptive statistics, factor analysis, and Mann–Whitney–Wilcoxon nonparametric tests.

The study involved 70 elementary school students 9–10 years old (36 girls and 34 boys), who studied at Secondary School No. 21 in Irkutsk (Russia). All parents provided their consent to the study. To implement the experimental part of the research, the students were differentiated into two groups, 35 people each. Lessons were held in a classroom having special equipment for watching cartoons and drawing tools. The main form of interaction between a psychologist and schoolchildren was a polylogue. The experimental work was carried out in strict accordance with the ethical standards of the professional activity of a teacher-psychologist.

Results

Psychological Analysis of the Cartoons

The first stage of the study involved an immanent psychological analysis (Kyshtymova, 2018) of cartoons in order to form hypotheses about their potential impact on children.

The cartoon “Chunya” presents a story, the main idea of which is expressed by the words of the protagonist’s mother, addressed to him: “It doesn’t matter who you are, what matters is what you are!” Anti-stigmatization as the key idea of this cartoon, created in 1968, is especially relevant today, at the time of increasing economic, political, educational, etc. differentiation of all societies.

The plot is built according to a traditional fairytale model of travel: the protagonist leaves home and faces encounters, which test and manifest his

character. For example, Chunya helps a lost chicken and then a hare. He faces a situation of undeserved resentment associated with his “species” affinity to pigs—carriers of the stigma of untidiness. But the protagonist solves all the problems under the guidance of his wise mother.

The verbal means of presenting the ideological content of the cartoon correspond to the age characteristics of the target audience. An analysis conducted using TextAnalyzer showed that, out of 342 words uttered by the cartoon characters, only 98 are non-repetitive. Therefore, children’s consciousness is not overloaded with verbal information; the lexical simplicity and laconicism of syntactic constructions allow children to adequately perceive the spoken word. The “harmonious center”, which marks the semantic dominant of the text and is determined according to the law of the “golden section” (Kyshtymova, 2008), corresponds to the following statements: “Everything in the world, I’m going to learn about everything in the world”; and “I’m not scared, I’m not scared at all”. Repetition and music reinforce the value of these positive statements.

Another formal sign—a tempo-rhythm—also corresponds to the specifics of information processing in terms of age: in 10 minutes of the cartoon’s duration, 25 scenes follow each other, the events on the screen are logical, slow-paced and clear to children. The rhythmic clarity is supported by the melody: a simple and joyful musical intonation complements the visual images of the characters.

The cartoon characters are depicted similar to children’s toys, which corresponds to children’s perception. At the same time, the characters (anthropomorphous animals) are the carriers of the following features: faithfulness and kindness, generosity and naiveté, strictness and readiness to help. The semantic load of the mother image as a conduit of moral truth, which the mother transfers to her child with great care and love, constitutes the educational value of the cartoon.

The narrative centers around the protagonist leaving the space protected by his mother at home into the outside world, fraught with many surprises. This event entails important consequences for Chunya and, of course, the audience of the cartoon, the understanding of the truth of maternal attitudes, the importance of kindness and mutual assistance, acceptance of one’s dissimilarity from others and making friends. It can be assumed that the film will be understood by children and will have a positive impact on their development.

The episode “Innocence itself” of “The Barkers” involves an everyday story about gifts, which the elder children demand from their mom with no success. After some illogical actions (a present for the youngest and the elder children’s pretense act), the main characters receive their gifts, but considerably less valuable. There is no obvious educational idea in this cartoon.

Our analysis has shown that the temporythm is characterized by an increased dynamicity—in 5.6 minutes, 59 scenes follow, accompanied by color and sonic intensity. Such a way of presenting information “exceeds the conscious resources” (Pronina, 2003), which makes the official addressing of the cartoon “0+” (restriction “for children under 6 years” established by the legislation of the Russian Federation) illegitimate.

The verbal component of the cartoon is characterized by its richness: the total number of non-repeating independent words spoken in the cartoon is 139. Since a two-year-old child is considered to have a vocabulary of around 50 words, the official labeling of the film "0+" seems unreasonable. It is interesting that the place of the "harmonic center" of the text (which was calculated twice: from its beginning and from its end) corresponds to the statements of the Barkers' mother: "Not getting any new things until school is out", and "not [...] any new things". The viewer's attention is thus unconsciously fixed on a mirrored repeated statement, which (according to the narrative) is false.

The mother of the Barkers' exhibits inconsistent behavior. Refusing gifts to her children, she gives one for the youngest, which causes jealousy in the eldest and provokes them to cheating. In the end, she still buys presents to the rest of the children. The vagueness of the cause-and-effect relationships of the mother's behavior expressed in the cartoon complicates the viewers' understanding of the idea that deception is inadmissible. By punishing the children for cheating with the wrong gift they expected, the mother is cheating them herself.

The cartoon centers around an event of violation of the ethical border, which both the Barkers' children and their mother cross. The consequences of this intersection, which have special importance for the viewer, are not obvious in the represented narrative, and sympathy with the main characters is not positive for the development of younger viewers. The events of the cartoon require critical reflection, which children lack at their young age.

The episode "Mummy Pig at Work" ("Peppa Pig" cartoon series) presents an event of children interfering with the work of their mother, crossing her professional space. The consequences for the main characters are positive—everyone is happy. The emotional background of the presented events is emphatically positive in all stages of the on-screen actions, which causes "the contagious effect" and viewers adopting the transmitted models of behavior. This is also facilitated by the use of the "exceeding the conscious resources" technique, which violates the psychological safety of the viewer: 42 scenes follow each other in the 4.8 minutes of the cartoon's duration.

The images of the parents present a model of transformed traditional family roles: Daddy Pig prepares food and does not make decisions on his own, appealing to his wife's opinion, while Mom works and her decisions are not challenged. At the same time, the cartoon realizes an example of broken communication—the mother is the dominant figure, who does not listen to others. When asked to fix the computer, Dad hesitantly utters: "But I'm not very good at such things". Mom's answer is illogical: "Thank you, Daddy Pig". The violation of the logic is also manifested in the scene where Daddy Pig, who is not good at technology and accidentally presses the necessary button, joyfully states: "Yes, I am a bit of an expert at these things". It is important to understand that the category of the comic is not yet accessible to the understanding of children, the on-screen events are perceived as an example of the "correct" reality.

An analysis of the verbal component of the media text shows its lexical simplicity: out of 189 words, 145 are repeated. This makes the broadcast information

available to children. The “harmonic center” of the text contains the reference “Daddy Pig, can you mend the computer?” This phrase marks the episode with the transformation of the Father’s role function, who, in this situation (a) cannot help; (b) cannot disobey Mom; (c) deceives her and himself by saying that he “mended it” and now is “an expert”.

The visual presentation of the characters in the cartoon is characterized by convention and graphic disproportionality, which does not correspond to the age characteristics of the target audience. It is despite the fact that the background of the action, reminiscent of a child’s drawing, leads children to trusting the on-screen events.

The conducted analysis suggests that the cartoon can have a strong emotional impact on children and provoke unproductive behavior. Its formal marking “0+” does not meet the criteria for the psychological safety of children.

Thus, our psychological analysis of the 3 media texts shows that only the cartoon “Chunya” is characterized by developmental potential, while “Innocence itself” and “Mummy Pig at Work”, due to their formal and semantic features, can lead to negative mental changes in younger viewers.

Semantic Assessment of the Cartoons by Elementary School Students

70 elementary school students 9–10 years old (36 girls and 34 boys) took part in the study of perception of cartoon mother images. Having watched each of the 3 cartoons, the participants evaluated the mother image as projected in these episodes according to the scales of semantic differential. The data obtained were subjected to factor analysis using the method of principal components with Varimax rotation. The results generated 4 factors explaining 66.1% of the variable dispersion.

The 1st factor, referred to as the “factor of education”, included the following scales: “educated–uneducated” (0.852), “responsible–irresponsible” (0.791), “competent–incompetent” (0.783), “experienced–inexperienced” (0.748), “cultured–uncultured” (0.706), “sociable–unsociable” (0.678). The 2nd “factor of love” constituted the scales “beloved–hated” (0.836), “cheerful–sad” (0.792), “fond of children–not fond of children” (0.751), “understanding–not understanding” (0.625). The 3rd “factor of patience” included the scales “calm–irritable” (0.929), “patient–impatient” (0.853), “tactful–tactless” (0.780). The 4th “factor of respect” involved the scales “prestigious–not prestigious” (0.771) and “friend–foe” (0.766). Thus, the cartoons were categorized by younger students on the semantic grounds of “education”, “love”, “patience”, and “respect”.

Our analysis showed that the research participants perceived the mother in “Chunya” as patient ($F_3 = 0.15$) and showing respect for others ($F_4 = 0.11$). At the same time, they saw her as “uneducated” ($F_1 = -0.07$) and not loving enough ($F_2 = -0.01$), compared to Mummy Pig from “Peppa Pig” ($F_1 = 0.04$, $F_2 = 0.01$) and Mom of the Barkers: $F_1 = 0.03$, $F_2 = 0.01$ (Fig. 1). Obviously, the children’s assessment was mediated by the simplest “external” stereotypes: was being engaged in housework and wearing an apron, Chunya’s mother was categorized as “uneducated”, compared to Mummy Pig who “worked” on a computer. At the same time, more adequate criteria

for assessing education—literacy, reasoning of speech, and motivation of actions—were not used by children and did not affect their assessment due to the lack of critical thinking at their age.

The difference in the semantics of cartoon characters in terms of the “love” factor did not reach the level of statistical significance ($p > 0.05$), while all the values were small (Fig. 1). It can be assumed that the children’s unconscious expectations were not satisfied. The media (virtual) image may generally have a weak potential for realizing the semantics of maternal love, or the artistic level of the media text addressed to children should be very high and take into account the peculiarities of children’s perception.

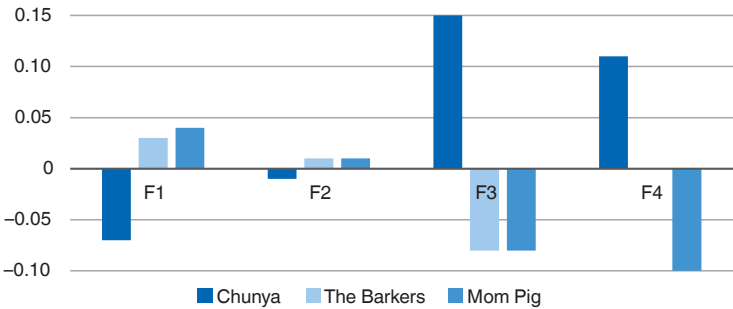
The high semantic assessment of the image of Chunya’s mother in terms of “patience” and “respect” shows that (a) younger schoolchildren understand adequately the meanings embedded in the cartoon “Chunya”; (b) the fictional world of this media text corresponds to the peculiarities of children’s perception; and (c) this cartoon has a high educational potential.

The low estimation of Mummy Pig in terms of “patience” and “respect”, indicates, on the one hand, the digestibility of the information broadcast by the cartoon “Peppa Pig” for children (which was hypothetically assumed based on the psychological analysis of the media text) and, on the other, the potential negative impact of this cartoon on a child’s personality due to the negative characteristics attributed to the mother.

The data obtained demonstrate that children perceive the events of the media world as real, with their response being mediated emotionally rather than cognitively. Metaphors, humor, and semantic ambiguity are not perceived by children and do not facilitate understanding.

The children’s assessment of the verbal stimulus “mom” shows a smaller semantic differentiation. The conducted factor analysis revealed two factors—“understanding” and “prestige”—explaining 66.8% of the variable dispersion.

Figure 1
Semantic Assessment of the Mother Images in the Cartoons “Chunya”, “Innocence itself” (The Barkers) and “Mummy Pig at Work” (Peppa Pig) by Elementary School Students in Terms of the “Education” (F1), “Love” (F2), “Patience” (F3), and “Respect” (F4) Factors



The “understanding” factor, with a high load, included the scales, one pole of which is represented by the following epithets: “patient”, “understanding”, “sociable”, “just”, “kind”, “cheerful”, “fond of children”, “not strict”, “tactful”, “calm”, “tolerant”, “reliable”, “beloved”, “honest”, “experienced”, “modern”, “smart”, “hardworking”, “humble”, and “level-headed”.

The “prestige” factor is represented by the words: “prestigious”, “successful”, “friendly”, “full of energy”, “rich”, “responsible”, “charming”, and “competent”.

Our analysis of the perception of the word “mom” by elementary school students revealed an unexpectedly low result: a negative value by the factor of “prestige” ($F_2 = -0.57$) and a low value by the factor of “understanding” ($F_1 = 0.1$). The obtained result can be considered reliable due to the validity of the diagnostic procedure; however, this finding contradicts the traditional belief about the value of the mother image for children. It seems likely that, at the elementary school age, the role of the significant other shifts from the mother to the teacher. This also evidences to an increasing role of media communications in the lives of both children and adults, leading to a decreased intensity of interpersonal communications and a shortage of maternal participation in the lives of children.

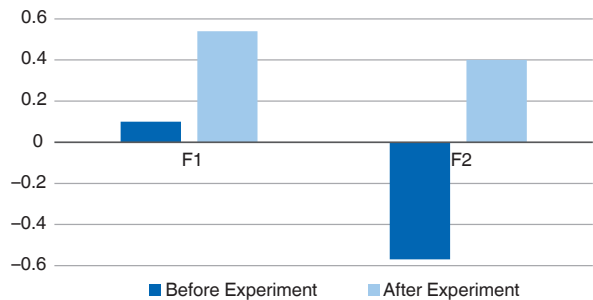
Results of the Experimental Study

On the basis of the data obtained in the semantic study of the stimulus “mother”, we conducted a developmental experiment with the aim of correcting the mother image in the minds of elementary school students. We assumed that watching cartoons can have a positive effect provided that (a) it is accompanied by a joint critical discussion with a psychologist and (b) such viewing involves media texts that possess a developmental and educational potential.

Two groups of elementary school students (70 children in total) watched the cartoons under study and the cartoon “Umka” (Pekar & Popov, 1969) followed by their discussion with a psychologist. Having completed the developmental work, we conducted another round of semantic assessment. For both factors “understanding” and “prestige”, the Wilcoxon test showed a statistically significant shift in values ($p = 0.000$): $F_1 = 0.54$, $F_2 = 0.4$ (Fig. 2).

Figure 2

Changes in the Semantic Assessment of the Mother Image by Younger Schoolchildren in Terms of the “Understanding” (F_1) and “Prestige” (F_2) Factors during the Experiment



Our results show that the involvement of children in media communications can have both negative and positive effects on their development. The extent of this impact depends on the characteristics of the media content and the children's readiness for its analytical and reflective perception. In this respect, watching cartoons and discussing their content with adults is a helpful developmental instrument.

Discussion

Researchers are unanimous in the opinion that cartoons can have a significant impact on the personality and behavior of younger viewers. At the same time, there are no strict scientific criteria for differentiating cartoons as potentially safe or dangerous for children. The same applies to algorithms for psychological analysis of children's media content.

Cartoons, whose impact on children is the focus of our study, are a complex system of structural components and specific relationships between them. However, when studying their psychological effects, researchers frequently consider only particular aspects. Thus, the psychological potential of a film can be assessed by identifying its main idea—what is this movie about? (Güneş et al., 2020). There is an opinion that only educational programs can be useful for preschool children (Hu et al., 2018).

In another group of studies, the attention of psychologists was focused on the imaginative system of the content. According to the authors, it is the artistic image that determines the viewer's involvement. This image, which is total, synesthetic, and involves all feelings (McLuhan, 1964), has a decisive effect on the emerging attitude toward the prototype. In this context, researchers analyzed the psychological impact of films with negative images of elderly characters (Rovner-Lev & Elias, 2020; Zurcher & Robinson, 2018). It was shown that the media image of a disabled person can form a respectful attitude toward differently abled people (del Moral Pérez & López-Bouzas, 2021). Russian researchers discovered cases in which the image of the mother in media products was distorted (Kazachenko & Kartushina, 2018; Shishova, n.d.).

N. Martins et al. were interested in the image of a film character as a decisive factor. When studying the viewers' attitude toward aggressive actions in sitcoms, they found that adolescents evaluate aggression on the screen depending on their sympathy or antipathy for the characters, rather than on the nature and strength of the aggressive action. According to the theory of disposition, emotional disposition toward a character determines moral indifference to their aggressive behavior and provokes the imitation of the same actions in reality (Martins et al., 2016). The duration of watching cartoons can also be considered a fundamental factor that determine their impact on the cognitive and social development of children (Hu et al., 2018). Researchers rarely focus on the psychological impact of film plots due to the complexity of their analysis in the disciplinary framework of psychology (Kazachiner & Tkachenko, 2020).

We believe that a psychological analysis of any media product, aimed at revealing its transformational potential, should involve a comprehensive analysis of its diverse components and interconnections. The complexity of the fictional world of a film or cartoon cannot be reduced to the main idea or individual images. Therefore, it seems unproductive to study media images out of the context of the entire narrative. It is the narrative that creates a media reality experienced by the viewers. An important criterion for the eventfulness of a narrative is its “consecutivity” manifested in the consequences for the thought and action of the affected subject (Schmid, 2010, p. 11). These consequences form the “expectation of consequences” in viewers, determining their behavioral patterns (Mayrhofer & Naderer, 2019). The narrative determines the extent of influence of a media product on its consumers. This function of the narrative is embedded in the very principle of its organization, which implies “crossing of a prohibition boundary” or “a semantic field” (Lotman, 1998) and violation of the rules that “preserve the order of this world” (Schmid, 2010, p. 8). The centrality of the narrative on an “out-of-bounds” event attracts the viewers’ attention and determines its acceptance or rejection as an appropriate model of behavior based on experiencing the consequences of crossing the border. With a particular force, this formative mechanism is actualized in media communications, which frequently involve children’s audience.

Cartoons are mimetic narrative texts. Therefore, their psychological study should be based on an interdisciplinary approach that appeals to narratology offering feasible algorithms for text analysis. The fictional nature of a mimetic narrative presupposes an appeal to the life experience of the viewer. Children lack such an experience and their perception is not mediated by the knowledge of the reality, whose distance from the virtual world becomes minimal in this case. Therefore, any psychological analysis of a text should follow the assumption that perception is determined not by the subject matter of a narrative (which is secondary), but rather by its formal elements, which, devoid of any referential meaning in themselves, gain a semantic function (Schmid, 2010). This assumption has determined our logic of analyzing cartoons, based on a consistent integration of methods applied in different disciplines and scientific paradigms for studying media texts.

The data obtained allowed us to develop and test hypotheses about the potential impact of media products on children. Our results, as expected, do not agree with those obtained by the studies that focused exclusively on the analysis of the content of media products. Thus, O. V. Kazachenko and E. A. Kartushina categorized the series “The Barkers” as productive for a child’s development, because it projects a positive and traditional image of the mother. Their argumentation was that the mother of the Barkers had many children and the family implemented a democratic style of communication (Kazachenko & Kartushina, 2018). However, our multi-aspect analysis of this cartoon, as well as the study of its perception by younger schoolchildren, revealed a significant destructive potential of this popular media text.

Conclusion

The complexity of the problem of media influence on children's development requires the coordination of different paradigmatic approaches and algorithms for psychological analysis of media texts.

This research was conducted using the method of psychological analysis of a media text. This method is aimed at investigating specific features of the narrative, verbal presentation of the events taking place on the screen, as well as cartoon images, rhythmic, musical, and visual characteristics. We believe that only using a comprehensive analysis of a media work, one could understand the world it generates, the world in which viewers "have to lead their lives" (Luhman, 2000, p. 115). This statement gains significant importance in the case of children. Due to the specifics of formation of cognitive and personal traits, children either lack or have minimal skills for distinguishing actual reality from a virtual reality and for reflecting on fictional media events.

The influence of animated cartoon images on children is determined not only by their specific presentation, but also by the totality of the characteristics of a media product. The conducted psychological analysis of three cartoons containing the mother image showed that these products have a different impact on children. Unfortunately, the formal labeling of these cartoons in terms of their psychological safety (followed by the parents) does not correspond to our conclusions.

The empirical study conducted to test the formulated hypotheses about the effect of cartoons on children showed that the semantics of the image of a cartoon mother is determined by elementary school students based on the external characteristics of the media world, which children perceive as real. A child does not develop a complex aesthetic response when perceiving artistic ambiguity, paradoxical, or comic situations (as adults view them); the processes of critical comprehension of the on-screen events are not yet actualized.

The importance of the mother image for the development of a child's personality, as well as the influence of cartoon images with a different psychological potential, determined the importance of studying the semantics of the word "mother" in the minds of elementary school students. Based on the data obtained, we conclude that children are dissatisfied with the maternal attention they receive. The low evaluation of the mother image according to the criteria of "understanding" and "prestige" was a rationale for conducting a developmental experiment aimed at correcting the mother image in the minds of younger children. The experiment confirmed that cartoons can be an effective means for forming and correcting a child's personality provided that (a) these cartoons meet the criteria of psychological productivity and (b) children watch and analyze the cartoon together with a psychologically and media competent adult.

The significance of the study lies in the development and testing of an algorithm for systemic psychological work with children's media content, which includes (a) its psychological analysis in order to substantiate the potential impact of cartoons on the viewers; (b) identification of the peculiarities of children's perception of the content addressed to them; (c) use of cartoons in the process of carrying out correctional work with children.

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